

IN THE CLAIMS:

Please amend the claims of this application so as to read as follows:

1-27. (Canceled, without prejudice)

28. (Previously Presented) A data storage medium for use with a display device,
said data storage medium having a plurality of pre-specified data
units that together define a document recorded thereon,
wherein

each pre-specified data unit includes (i) display
elements for display by the display device, and (ii)
management elements associated with said display
elements, said management elements including all
information necessary for the display device to select
among the display elements for display, including a
display of selected ones or contiguous groups of said
display elements in a predetermined sequence as a
scroll display, and

wherein

said information for selecting among the display
elements for scroll display defines a plurality of
intervals that together form a scroll path along which
said scroll display is to be conducted, the intervals
forming said scroll path being specified by line
segments respectively defined by coordinate values of
a starting point and an end point in a coordinate
system defined by said pre-specified unit according
to coordinate values assigned to the display elements
in said pre-specified unit.

29. Canceled, without prejudice.

30. Canceled, without prejudice.

31. (Previously Presented) A data storage medium as defined in claim 28, characterized in that the information for selecting among the display elements or contiguous groups of display elements for scroll display includes information for linking a first scroll display path with another scroll display path.

32. (Previously Presented) A data storage medium for use with a display device, said data storage medium having at least one pre-specified data unit recorded thereon, each said pre-specified data unit including display elements to be displayed by said display device, and management elements associated with said display elements for controlling the display, including the scroll display, of said display elements or contiguous groups of said display elements, wherein said management elements include elements for controlling a scroll display speed.

33. (Previously Presented) A data storage medium

as defined in claim 28, characterized in that the management elements include management elements associated with selected areas of said coordinate system defined by said pre-specified unit associated with said selected ones or said contiguous groupings of said display elements for scroll display.

34. (Previously Presented) A data storage medium

as defined in claim 28, characterized in that the management elements include management elements specifying a scale of enlargement or reduction of said display elements or contiguous groupings of display elements located along a scroll path for scroll display.

35. (Previously Presented) A data storage medium

according to Claim 28 wherein the management elements in each pre-specified data unit include display information and scroll display information, and

wherein the scroll display information includes synchronous reproduction information for specifying non-motionless display elements to be reproduced in synchronism with a scroll display of other display elements.

36. (Previously Presented) A display device for displaying display elements stored on a data storage medium as defined in any one of claims 28, 29, 31, 32, 33, 34 or 35, comprising a display controller for performing a scroll display of said selected ones or contiguous groups of said display elements based on said information for selecting among the display elements for scroll display .
37. (Previously Presented) A display device as defined in claim 36, further comprising a scroll indicating means for scroll display , and wherein said scroll display is conducted based on said information included in said management elements for selecting among the selected ones or contiguous groups of said display elements for scroll display only while a user instructs said display controller to perform scroll display in either forward or backward directions along a scroll path.

38. (Previously Presented) A data storage medium for use with a display device, said data storage medium having display data associated with an entire document recorded thereon, said display data including a plurality of image data objects for display on a display screen of said display device and all management information associated with each of said image data objects required by said display device for the display, including the scroll display, thereof, comprising:

a computer readable medium on which said display data is recorded in the form of distinct files, each said distinct file containing a pre-selected portion of said display data including at least one of said plurality of image data objects along with all of the respective associated management information required by said display device for the display, including the scroll display, thereof, wherein said management information for the scroll display of said image data objects includes scroll path information defining a plurality of intervals that together form a scroll path, said intervals being specified by line segments respectively defined by coordinate values of a starting point and an end point in a coordinate system defined by said distinct file according to coordinate values assigned to said image data objects or contiguous groups of said image data objects in said distinct file.

39. Canceled, without prejudice.

40. Canceled, without prejudice.

41. (Previously Presented) A data storage medium

as defined in claim 38, characterized in that the management information associated with the image data objects contained in each one of said distinct files includes information for linking a scroll display of selected ones or contiguous groups of image data objects contained in that file with selected ones or contiguous groups of image data objects located on a scroll path contained in at least another one of said distinct files.

42. (Previously Presented) A data storage medium

as defined in claim 38, characterized in that the management information associated with the image data objects or contiguous groups of image data objects in each said distinct file required for the scroll display of said image data objects or contiguous groups of said image data objects includes scroll display speed information.

43. (Previously Presented) A data storage medium as defined in claim 38, characterized in that the management information required by said display device for the scroll display of said image data objects or contiguous groups of said image data objects includes information specifying a scroll display area on a display screen of said display device within which said scroll display of said image data objects or said contiguous groups of said image data objects is to occur.
44. (Previously Presented) A data storage medium as defined in claim 38, characterized in that the management information required by said display device for the scroll display of said image data objects or said contiguous groups of said image data objects includes information specifying a scale of enlargement or reduction of a display area for scroll display on a display screen of said display device within which said scroll display is to occur.
45. (Previously Presented) A data storage medium as defined in claim 38, characterized in that said management information required for scroll display by said display device associated with said image data objects or contiguous groups of said image data objects includes synchronous reproduction information for specifying other image data objects to be displayed in synchronism with the scroll display of each said image data object or contiguous groups of image data objects.

46. (Previously Presented) A display device for displaying image data objects or contiguous groups of image data objects contained in at least one distinct file recorded on a data storage medium as defined any one of claims 38, 39, 41, 42, 43, 44 or 45, comprising a display controller performing scroll display of said image data objects or contiguous groups of said image data objects located on a scroll path based on management information associated with those image data objects or contiguous groups of said image data objects required by said display device for the scroll display thereof.
47. (Previously Presented) A display device as defined in claim 46, further comprising a scroll indicating means for monitoring the scroll display of said image data objects or contiguous groups of said image data objects on a display screen of said display device, wherein said scroll display is conducted based on the management information required for display, including scroll display, only while a user instructs said display controller to perform said scroll display in either forward or backward directions along a selected scroll path.

48. (Previously Presented) A data storage medium according to claim 28,
wherein the information necessary for display, including scroll
display, specifies a scroll path of said selected ones or contiguous
groups of said data elements including vectors connecting said
intervals identified by starting and ending coordinate values of
said selected ones or contiguous groups of said data elements in a
coordinate system defined by said display elements according to
coordinate values assigned to the display elements in each of said
pre-specified data units.

49. (Previously Presented) A data storage medium
according to claim 48, wherein a sequential display of said
selected ones or contiguous groups of said display elements is
conducted along the predetermined sequence of intervals
determined by said vectors.

50. (Previously Presented) A data storage medium

according to claim 28, wherein said information necessary for said display device to select among said display elements for the display, including the scroll display, thereof specifies a scroll path for the display of said selected ones or contiguous groups of said display elements including vectors connecting the intervals identified by starting and ending coordinate values of said selected ones or contiguous groups of said display elements in a coordinate system defined by said display elements according to coordinate values assigned to the display elements in each of said pre-specified units; and
wherein a sequential display of said selected ones or contiguous groups of said display elements is conducted along the predetermined sequence of intervals determined by said vectors.

51. (Currently Amended) A data storage medium according to claim 38,
wherein said management information required by said display device for the display, including the scroll display, of said image data objects or contiguous groups of said image data objects specifies the scroll path of the display of the image data objects or contiguous groups of the image data objects as including vectors connecting the intervals identified by starting and ending points of coordinate values of said image data objects in a coordinate system defined by said ~~according to~~ coordinate values assigned to said image data objects in each of said distinct files.

52. (Previously Presented) A data storage medium

according to claim 51, wherein a sequential display of said image data objects or contiguous groups of image data objects is conducted along a predetermined sequence of said intervals determined by said vectors.

53. (Previously Presented) A data storage medium

according to claim 38, wherein the management information required by said display device for the display, including the scroll display, of said image data objects or contiguous groups of said image data objects specifies the scroll path of the display of the image data objects or the contiguous groups of image data objects including vectors connecting the intervals identified by starting and ending coordinate values of said image data objects in a coordinate system defined in said image data objects according to coordinate values assigned to said image data objects in each of said distinct files, and
wherein a sequential display of said image data objects or contiguous groups of image data objects is conducted along a predetermined sequence of said intervals determined by said vectors.

54. (Previously Presented) A data storage medium

as defined in claim 28, characterized in that the scroll display control information includes a scale of enlargement or reduction of a display area for scroll display on a screen of said display device.

55. (Previously Presented) A data storage medium
as defined in claim 38, characterized in that the management
information required by said display device for the display,
including the scroll display, of said image data objects or
contiguous groups of image data objects includes a scale of
enlargement or reduction of a display area for scroll display on a
screen of said display device.